University of Jordan
Computer Engineering Department
Course Outline
Parallel and Distributed Systems (0907521)

I. Course Description

Introduction to parallel processing and distributed systems. Multicomputers, multiprocessors, network of workstations, and scalable systems. Interconnection networks: topologies, routing, and protocols. Distributed systems design for scalability, reliability, availability, and security. Communication paradigms including shared memory, message passing, RPC, and distributed objects. Distributed system services including replication, caching, file system management, naming, clock synchronization, and multicast communication. Sample applications. Development of programs and applications for parallel and distributed systems.

II. Textbook and References

1. P. Pacheco, **An Introduction to Parallel Programming**, Morgan Kaufmann, 2011.
2. D. Culler and J.P. Singh with A. Gupta. Parallel Computer Architecture: A Hardware/Software Approach, Morgan Kaufmann, 1998.
3. K. Hwang. Advanced Computer Architecture: Parallelism, Scalability, Programmability, McGraw-Hill, 1993.
4. H. Stone, High- Performance Computer Architecture, 3rd ed., Addison-Wesley, 1993.
5. Patterson and Hennessy. Computer Organization & Design: The Hardware/Software Interface, 4th ed., Morgan Kaufmann, 2009.
6. Hennessy and Patterson. Computer Architecture: A Quantitative Approach, 5th ed., Morgan Kaufmann, 2011.

III. Student Materials

Textbook
Class Handouts
Web Page: http://www.abandah.com/gheith/?page_id=843
PC
Internet

IV. College Facilities

A classroom with whiteboard and projection facilities, library, and computer laboratory.

V. Instructional Methods

1. Lectures
2. Office Discussions
3. Facebook page posts and discussions on
   https://www.facebook.com/Cpe521ParallelAndDistributedSystems

VI. Evaluation of Outcomes

1. Term Project   20%
2. Midterm Exam   30%
3. Final Exam   50%

VII. Class Policies
- Attendance is required
- All submitted work must be yours
- Cheating will not be tolerated

VIII. Special Dates
- Sun 15 Sep 2013   First Lecture
- Sun 27 Oct 2013   Project Proposal Due
- Sun 8 Dec 2013   Project Report Due
- Thu 2 Jan 2014   Last Lecture

IX. Course Outline
The following table contains the list of topics to be covered in the course.

Topic	Textbook Chapters
Introduction	1
Parallel Hardware	2
Distributed Memory Programming	3
Midterm Exam	
Shared-Memory Programming	4 & 5
Parallel Program Development	6

X. Sections and Instructors

Sec	Meeting Time	Room	Instructor	Office Hours	e-mail, Homepage
1	Mon & Wed 9:30-11:00	CPE 001	Dr. Gheith Abandah	Sun & Thu 10:00 – 11:00 Mon & Wed 11:00 – 12:00	abandah@ju.edu.jo, http://www.abandah.com/gheith